selecting (five-way key) and is placed centrally on the front surface of the phone between the display **3** and the group of alphanumeric keys.

[0053] The alphanumerical keys, the softkeys **9** and the call handling keys **11**,**12** are formed by touch sensors **14** that are disposed on a plate member **8** that will be described in greater detail below. The parting lines between the touch sensors **14** are indicated by interrupted lines. The parting lines are shown for illustrative purposes and are not necessarily visible on the keypad **7** itself. The top of the surface of the keypad **7** can therefore be substantially completely flush. The navigation key **10** is not part of the plate member **8**.

[0054] A releasable rear cover (not shown) gives access to the SIM card (not shown), and the battery pack (not shown) in the back of the phone that supplies electrical power for the electronic components of the mobile phone **1**.

[0055] The mobile phone **1** has a flat display **3** that is typically made of an LCD with optional back lighting, such as a TFT matrix capable of displaying color images. A touch screen may be used instead of a conventional LCD display.

[0056] FIGS. **2** and **3** illustrate the mobile phone **1** with the first embodiment of the keypad according to the present invention in exploded views. The keypad **7** comprises a plate member **8** with keypad graphics depicted thereon. The touch sensors **14** (such capacitive touch sensors) and backlighting **21** (FIG. **13**) for the key graphics are disposed on the front of the plate member **8**. The plate member **8** is provided with a suitable recess **10'** through which the navigation key **10** may protrude. A peg **22** projects from the rear side of the plate member **8**. The peg **22** serves to engage a biased switch **13**, which is in this embodiment a dome switch.

[0057] FIG. **4** is a cross-sectional view through the mobile phone **1** with the plate member **8** in a non-depressed or idle position. FIG. **5** is the same view with the plate member **8** in a depressed position. The housing **2** of the mobile phone includes a front cover **3***a* with a transparent window for viewing the display **3**, a top member **25**, a bottom member **26** and a rear cover **27**. The interior components of the mobile phone **1**, such as the battery, printed circuit board, antenna, speaker, inner frame, shielding, etc. are diagrammatically represented by block **30**.

[0058] Leaf springs **23** serve to guide the plate member **8** and provide bias for the plate member **8** towards the idle position. The peg **22** may also be received in a guiding channel (not shown) that is unitary with the interior frame of the mobile phone **1**. The snap action of the dome switch **13**, in combination with the leaf springs and **23** provide a tactile feedback for the user when the pressing the plate number **23**.

[0059] FIGS. **6** to **10** illustrate a second embodiment of the keypad **7** according to the invention. The second embodiment also includes a plate member **8** with a plurality of keys thereon, and includes in this embodiment only the numerical and "*" and "#" keys.

[0060] Parting lines are shown between the keys to show the user the borders between the neighboring keys, but in analogy to the first embodiment there is no constructional requirement for having parting lines so that the keypad can be provided with a substantially flush top surface.

[0061] The keys are formed by touch sensors **14** on the front of the plate member **7**. A collapsible ring **33** (indicated by interrupted lines) is attached to the rear side of the plate member **7**. FIG. **7** illustrates the collapsible ring **33** in greater detail. Preferably, the collapsible ring **33** is composed from two ring members **33***a* and **33**B that are connected to one another by a fold line.

[0062] FIG. **8** is a cross-sectional view of the keypad when the plate member **7** is not depressed. The plate member **7** includes a cover layer **31** in which the key graphics are included and a capacitive sensor layer **32** in which the capacitive sensors **14** are included. A disc shaped upper support member **34** is attached to the underside of the capacitive layer **32**. The upper support member **34** connects to the upper side of the collapsible ring member **33**. The collapsible member **33** is connected by a fold line or similar hinged connection to a ring shaped lower support member **35**. The lower support member **35** is secured to the printed wired board **36** of the mobile phone. The lower support member **35** could of course be secured to any other substrate or component of the device in which the keypad **7** is to be used.

[0063] FIG. **9** shows the keypad **7** according to the second embodiment when it is depressed in a central position, e.g. when the user presses hard enough on the key marked "5". When the plate member **8** is in this position an electrical contact is established (contacts not shown, but could be formed by the collapsible ring **33** in collaboration with a ring contact disposed on the printed circuit board **36**).

[0064] FIG. **10** shows the keypad **7** according to the second embodiment when it is depressed in an off-center position, e.g. when the user presses hard enough on a key along the periphery of the keyboard. When the plate member **8** is in this position an electrical contact is established.

[0065] Thus, in the second embodiment the biased switch **13** is formed by the collapsible member **33** in combination with contacts.

[0066] The concept of a ring shaped collapsible member supporting a plate member is not limited to the combination with touch sensors, keypads or other user interface components on the plate member. Neither does the ring shaped collapsible member need to be part of a device that creates and breaks an electrical contact. The ring shaped collapsible member disposed between a substrate and a plate member can be used to create a switching element with the plate moving between depressed and non-depressed positions. The movement of the plate member can be used to act as an electronic switch, but this is only one of the possibilities for the use of the ring shaped collapsible member. Instead, the ring shaped collapsible member can be used for mechanical feedback, or mechanical control of a moving element between various positions. In this context, the possibility of the plate being depressed at various positions (in the center, or along various positions along the circumference of the plate member) can be used to control various mechanical elements simultaneously or a few mechanical elements independently in a more complex manner.

[0067] FIGS. **11** and **12** show a third embodiment of the keypad **7** according to the invention. The keypad comprises a plurality of keys **44**. A touch sensor **14** is placed on the top of each key **44**. A slidable plate member **41** is disposed under the keys **44**. The slidable plate member is suspended between two parallel guide rails **43** and can slide back and forth as indicated in the double headed arrow in FIG. **11**. A biased switch **13** is arranged to face one of the edges of the plate member **41**. The resilient characteristic of the biased switch urges the slidable plate member **41** to an idle or return to position.